

The Demographic Black Hole in the European Union

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Abstract: Low fertility rates in EU countries since the 1960s are bringing about a number of economic and social consequences which will have a negative impact on productivity, economic growth, social-welfare programs, patterns of immigration, Europe's ability to pull its weight diplomatically, culturally and militarily in the 21st century; and the very survival of the EU itself. Because of the current network of global trade and financial linkages international business and world prosperity could also be significantly impacted. Whether or not the worst of these consequences occur, however, depends upon the actions governments take and how they are able to manage the factors that limit needed solutions. The conclusion to this study is that no single policy intervention will resolve the situation and that governments need to move quickly and aggressively on several fronts in order to avoid the demographic and economic collapse of the EU itself.

Key words: demographics; population; immigration; deficits; dissolution; EU

JEL Codes: J1, J2, F22

1. Introduction

The world today is quite different from the one envisioned by demographer and political economist Thomas Robert Malthus (1798). Demographic trends over the past several decades have not brought about the scenario he anticipated of exploding populations, accompanied by ever diminishing resources. And there is not now nor has there ever been a "Population Bomb" as subsequently predicted by Paul R. Ehrlich (1968). Instead of population explosion, world population growth is slowing. Across the globe people are having fewer children and many are beginning to talk about "population implosion".

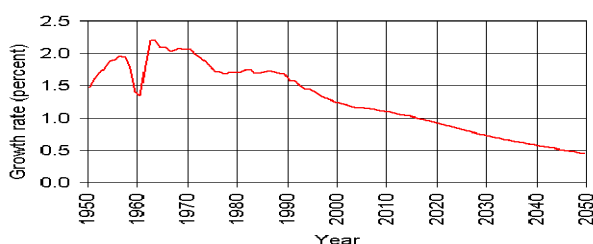


Figure 1 World Population Growth Rates: 1950-2050

Source: U.S. census bureau, international data base, December 2009 update

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The root cause of this implosion is declining fertility rates. The TFR (total fertility rate) is the average number of children that would be born to a woman over her lifetime. In Europe the TFR plunged during the latter half of the 20th Century from a high of 2.66 during the period of 1950 to 1960 to 1.40 during the period 2000 to 2005 (a TFR of over 2.1 is the replacement rate). According to the World Economic and Social Survey (WESS, 2007), many countries have had low and decreasing fertility rates for decades—mostly the developed countries and economies in transition but also an increasing number of developing countries. In fact “... many less developed countries are experiencing rapid increases in the number of percentages of older people, often within a single generation” (Dobriansky, Suzman and Hodes, 2007). Due to China’s extremely low birth rate and compression of aging, for example “... China’s population, will age as quickly in one generation as Europe’s has over the past 100 years” and Japan “... stands to shed a quarter of its 127 million people over the next four decades” (Meyer, 2004; p. 1). “... before China can emerge as a true economic powerhouse, it will have to contend with a demographic challenge even more severe than that currently facing Japan” (Longman, 2004a; p. 52). The countries which make up the European Union are now poised to follow Japan’s pattern with nearly all EU nations on the verge of rapid population decrease. At its current fertility rate, for example, Italy’s population could shrink by one-third by 2050 and Spain is expected to cut its population nearly in half with each generation. “Italy, Spain, Germany and Poland have a fertility rate of less than 1.3 children per woman” (European Commission Green Paper, 2005; p. 1).

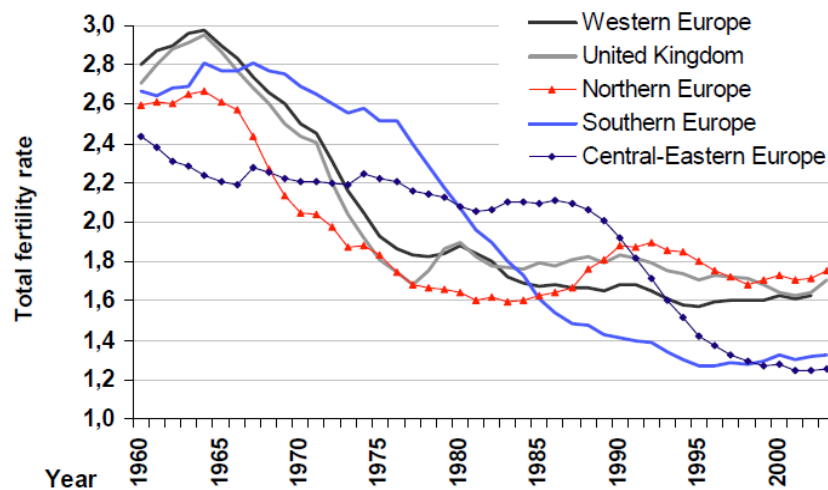


Figure 2 Total Fertility Rates for European Regions

Data sources: Council of Europe (2004-2005), Eurostat (2004-2005), and national stat. offices

The UN expects that: “In the more developed regions, below-replacement fertility prevails and is expected to continue to 2050” (Population Newsletter, 2007; p. 2). If these trends continue, then no country within the European Union will be able to produce enough children to prevent rapid population aging or sustain its population over time. As Lesthaeghe and Willems (1999; p. 211) point out that, the major culprit in the reduction in fertility rates since at least the mid-1960s has been a *tempo shift*; that is, a postponement of childbearing to later ages, though related factors such as divorce and separation of cohabiting partners, along with increased female education and employment play important roles.

2. Consequences of Below Replacement Fertility Rates

2.1 An Initial Economic Boom

Longman (2004a) explains that by having fewer children, Europe and some Asian countries (notably Korea and Japan) reaped a short-term demographic dividend starting in the latter half of the 20th Century which made possible an economic boom. “As the relative number of children declined, so did the burden of their dependency, thereby freeing up more resources for investment and adult consumption” (p. 37). But, this short-term dividend has been gained; it has turned out, at the expense of some potentially significant negative consequences. “Although at first the fact that there are fewer children to feed, clothe, and educate leaves more for adults to enjoy, soon enough, if fertility falls beneath replacement levels, the number of productive workers drops as well, and the number of dependent elderly increase. And these older citizens consume for more resources than children do” (Longman, 2004b; p. 5). Therefore, though children constitute a short-term expense and inconvenience, a decrease in birth has some decidedly negative consequences.

2.2 An Aging Population

First among those consequences is an aging population. “... the older adult population is increasing at a rate that we have not seen before in the history of our species” (Garrett, 2008; p.2). “The inexorable momentum of population aging around the world will likely become the most significant demographic process of the 21st century” (Kinsella and Phillips, 2005; p. 39). Aging in industrialized countries is driven by increasing longevity, the disproportionate size of the baby boom generation, but, most of all, by declining birth rates. According to the European Commission (European Commission Green Paper, 2005; p. 1), the number of elderly people is projected to increase significantly after 2010. “... the number of people aged 80 years or over is projected to almost triple from 21.8 million in 2008 to 61.4 million in 2060” (Giannakouris, 2008; p.1). The double bind, however, is that there will be fewer children, young people and adults of working age, resulting in a significant drop in the working age population and a shift in the age distribution of the population. According to a Eurostat News Release (26 August 2008; p. 1): From 2015 deaths are projected to exceed births in the EU27 and population growth due to natural increase would cease. “More than 19 percent of Italy’s population is age 65 and older, making it the world’s ‘oldest’ major country. Except for Japan, the world’s 20 oldest countries are all in Europe” (Kinsella et al., 2005; p. 7).

2.2.1 Changes in the age structure of the population

“Projections show that the percentage of the population between ages 20 and 64 will decline after 2010 and the percentage of people over age 65 will increase dramatically” (Rogers, Toder and Jones, 2000; p.2). According to a Eurostat study of the EU27: “The share of people aged 65 and over in the total population is projected to increase from 17.1% to 30.0% and the number is projected to rise from 84.6 million in 2008 to 151.5 million in 2060” (Giannakouris, 2008; p. 1). This process will dramatically change the age structure of the EU population.

2.2.2 Diminished savings

“As Japan has discovered, when a large share of the population is in its retirement-planning years (34 percent are aged 40-64, versus 27 percent in the United States), savings rates can rise to levels that depress consumption and economic growth” (Hewitt, 2002b; 12). However, the capacity to save diminishes with age. Older populations live off savings, rather than generating new capital. “Countries with older populations will be tapping their savings and driving rates of return higher because of the scarcity of capital” (Dobriansky, 2007; p. 25). And, as the number of working-age citizens diminishes, pension funds could eventually become exhausted as tax revenues and government

budgets are squeezed. According to a Eurostat News Release (28 January 2010), the seasonally adjusted household savings rate in the EU27 in the third quarter of was 13.7%, down from 14.2% compared with the second quarter. Hewitt (2002b; p. 12) cites an OECD analysis which found that savings rates in the industrial world could fall by as much as eight percent of GDP by the late-2020s. This may in turn negatively impact the availability of worldwide investment finance, particularly owing to the importance of EU countries to the world economy.

2.2.3 Decreased cognitive abilities of workers

“An important cause of age-related productivity declines is likely to be age-specific reductions in cognitive abilities. Some abilities, such as perceptual speed, show relatively large decrements already from a young age, while others, like verbal abilities, exhibit only small changes throughout working life” (Prskawetz, Mahlberg, Skirbekk, Vegard, Freund, and Winkler-Dworak, 2006; p. ix). In addition, age-related changes in aerobic, cardiovascular and musculoskeletal function may result in decreased breathing capacity, reduced ability to carry out aerobically demanding tasks, and a decline in muscle strength (Harper and Marcus, 2006).

“An aging work force may also be less able or inclined to take advantage of new technology” (Longman, 2004a; p. 129). Older workers are also less likely to be trainable in dealing with new technologies. In addition, after the proportion of elders increases in a society beyond a certain point, the level of entrepreneurship and inventiveness decreases (Neck, Zacharakis, Bygrave and Reynolds, 2002; p. 10).

2.2.4 A dramatic increase in the number of age-related diseases

As the population ages, so will the proportion of the population experiencing age-related diseases such as: Alzheimer’s and other forms of dementia, heart disease, obesity, high cholesterol and diabetes. Dealing with these health-related problems will result in a significant drain on the financial systems of EU governments. According to European Commission Research, “Alzheimer’s disease is most common amongst those over the age of 65. As the percentage of elderly people in Europe continually increases, this disease could prove problematic. There are even fears that, with such a massive strain, the health systems could approach a collapse” (European Commission Star Projects, accessed 3rd March 2010).

2.2.5 An increasing inability of governments and families to care for a growing elderly population

In a report prepared for the European Commission, analysts from the RAND Europe Study (Grant, Hoorens, Sivadasan, van der Loo, DaVanzo, Hale, Gibson and Butz, 2004) suggest that: there will be a decrease in the ability of governments to care for the growing elderly population as household size decreases. In addition, a report prepared for the National Institute on Aging indicates that: “... in countries with very low birth rates, future generations will have few if any siblings. As a result of this trend and the global trend toward having fewer children, people will have less familial care and support as they age” (Dobriansky et al., 2007; p. 16).

2.2.6 An exacerbation of related problems (the systems concept)

Demographic factors are not isolated from other factors affecting economic and social conditions but must instead be considered within the context of the entire system of interactions. “Demographic change magnifies all of a country’s problems, social as well as economic. An overburdened welfare state? Aging makes it collapse. Tensions over immigration? Differing birthrates intensify anxieties, just as the need for imported labor rises—perhaps the critical issue for the Europe of tomorrow” (Meyer, 2004; p. 1).

Population aging “... effects economic growth, trade, migration, disease patterns and prevalence, and fundamental assumptions about growing older” (Dobriansky et al., 2007; p. 7).

2.3 Population Decline

Population is determined by three factors: (1) how many people are born, (2) how soon they die, (3) the net

migrations into and out of a country. “Today, most European countries have already passed a demographic tipping point that virtually assures rapid not only population aging but also absolute population decline” (Longman 2004a; p. 61). “Around the year 2000, the population began to generate ‘negative momentum’: a tendency to decline owing to shrinking cohorts of young people that was brought on by low fertility (birthrate) over the past three decades” (Lutz, O’Neill, and Scherbov, 2003; p. 1191). This turning point meant that the number of children had dropped to a level that statistically assured that there will be fewer parents in the next generation than there are in the current generation. “Like population growth, population decline operates on a geometric curve that compounds with each generation” (Longman, 2004a; p. 67). “... after about 30 years, the pool of potential parents will also fall by half, ‘and at that point the population decline will become very intense’” (Longman, 2004b; p. 13).

Based on current fertility rates, the Population Division of the Department United Nations Secretariat, (*World Population Prospects: The 2008 Revision*) predicts that population size may return to what it was in the early 1970s, and could then go even lower. After 2010, in fact, the EU will likely enter a period of population decline lasting into the indefinite future. In recently added EU member states Hungary, Latvia, Lithuania, Estonia, Slovakia, and the Czech Republic the population is already falling (European Commission Green Paper, 2005; p. 1). According to British historian Niall Ferguson (2004, p. 2), “There has not been such a sustained reduction in the European population since the Black Death of the fourteenth century.”

Because of increased urbanization, (i.e., the movement of people from rural to urban areas), population decline is greater in small towns and villages and the problem is exacerbated because more women than men are moving to cities. These kinds of population shifts are beginning to create a demographic gender imbalance that threatens the future of entire regions. For example: “Between 1991 and 2005, as many as 400,000 eastern German women under the age of 30 moved west across the former Iron Curtain, compared to 273,000 young men under 30. This has led to a situation in some northeastern German villages in which there are just 45 women for every 100 men” (Expatica.com, 1st March 2010; p.1).

2.4 A Shortage of Workers

Due to declining populations, EU economies and Eastern European economies in transition face a decline in labor supply. According to Hewitt (2002a; p. 7), “... by 2030 Europe can expect its working age population to fall by 9 percent and its total population to fall by 8 percent ...” “Unless birthrates or immigration rates change radically, the compound affect ... will reduce the German workforce by 25 percent in 2050, the Italian by 30 percent and the Japanese by 38 percent” (Dychtwald, Erickson and Morison, 2006; p. 5).

2.5 Skill Shortages

Not only is there a growing shortage of workers in the EU, but preceding these labor shortages and of more immediate concern is a growing shortage of skilled workers in a number of key sectors such as: IT, health, consumer and commercial services (Germany), education, health and social services (Sweden), construction (France), engineers and teachers (the UK) (Boswell, Stiller and Straubhaar, 2004; p. 3). Such shortages hamper productivity, growth, technological and organizational innovation. A study commissioned by the German Economics Ministry reported that in the year 2007 alone the skills crunch could cost Germany more than 20 billion EUR (Deutsche Welle, 20th August 2007).

The lack of skilled workers may in turn lead to some form of “population raiding” in which EU countries compete to recruit skilled workers. The current EU “Blue Card” fast track program (similar to the U.S. green card), valid for two years, and Germany’s “skilled worker” program are examples of such programs. Deutsche Welle (16th July 2008) reports, for example, that: “The German cabinet on Wednesday made it easier for highly-skilled

workers from new EU countries to fill yawning gaps in the German labor market. But others will find it more difficult to get work visas for Germany.” ...“Germany must take part in an international competition to attract bright minds.” Labor Minister Olaf Scholz said. One result of such programs, however, would be a continuation around the world of the kind of “brain drain” that has impacted Eastern Europe. Of particular concern could be loss of medical practitioners from developing countries as demand and salaries developed countries continue to grow (WESS, 2007; p. 146).

2.6 Declines in National Productivity

“A nation’s gross domestic product (GDP) is merely a multiple of its working population times its average income. All things being equal, a decline in the number of workers translates into a decline in output. ...” “The Organization for Economic Cooperation and Development (OECD) has estimated that labor force declines will subtract 0.4 percent a year from potential economic growth in the EU between 2000 and 2025, and 0.9 percent a year thereafter”(Hewitt, 2002a; p. 7). “Europe’s declining population, the ageing of its workforce and its lack of qualified personnel mean that labour shortage, which is severely limiting the innovation capacity of those high-tech companies leading the economic revival, is fast becoming one of the largest constraints to the continent’s competitiveness” (EurActiv. Com, Tuesday, 5th June 2007).

Slower growth of GDP also means a smaller tax base and less tax revenue. “If productivity growth is not fast enough to compensate for the impending changes in the labour supply, the burden of maintaining and improving living standards while supporting an increasingly dependent older population becomes heavier.” and “...Because innovation implies a certain degree of creativity, and creativity is often higher among the younger members of society, innovation is typically associated with younger workers. It is thus argued that a shrinking proportion of younger workers in the labour force may result in slower advances in sciences and technology which could have an adverse impact on productivity growth” (WESS, 2007; p. 67).

2.7 Difficulty in Maintaining Retirement and Social Welfare Systems

“Population aging strains social insurance and pension systems and challenges existing models of social support” (Dobriansky et al., 2007). Some political leaders in Europe believe that their pension systems are already beginning to crumble. In addition, people of the baby boom generation born between 1946 and 1965 will be retiring in large numbers within the next two decades. “This will bring about a major shift in the balance between the active and the retired” (Keilman, 2008; p. 333).

One result of this imbalance will be “... a rise in the old age dependency ratio in the EU-27 (i.e., the population aged 65 years and older divided by the working age population); the figure should jump from 25% in 2008 to 53% in 2060. In sum, there will be fewer than two people of working age for every person aged 65+, against the current number of four to one” (Eurostat Report, 8 October 2008; p. 1). Axel Börsch-Supan, Director, Mannheim Research Institute for Economic and Demographic Change believes that the German Social Security System is on the verge of collapse and cannot be fixed by any single policy measure alone. “The ratio of workers to pensioners will decrease to about one to one within the next generation. This will put the German pay-as-you-go social security system under severe pressure” (Börsch-Supan, 1997; abstract).

According to Longman (2004b; p. 4), “... population aging, once it begins creating more seniors than workers, puts severe strains on government budgets. In Germany, for example, public spending on pensions, even after accounting for a reduction in future benefits written into current law, is expected to swell from an already staggering 10.3 percent of GDP to 15.4 percent by 2040-even as the number of workers available to support each retiree shrinks from 2.6 to 1.4. Meanwhile, the cost of government health-care benefits for the elderly is expected

to rise from today's 3.8 percent of GDP to 8.4 percent by 2040." Keilman (2008; p.1) points out that not only will pension systems be in jeopardy, but also that health and welfare programs may become unsustainable. "Population aging also depresses the growth of government revenues. Population growth is a major source of economic growth: more people create more demand for the products capitalists sell, and more supply of the labor capitalists buy. Economists may be able to construct models of how economies could grow amid a shrinking population, but in the real world, it has never happened" (Longman, 2004b; p. 4).

2.8 Lower Living Standards

"The slowdown in the growth of the workforce will leave fewer workers in relation to the population they must support. The term labor supply adequacy refers to the ratio of the quality-adjusted workforce to the total consumption needs of the population. Labor supply adequacy is one factor influencing living standards of the population; the stock of capital and know-how are others" (Rogers et al., 2000; p. 1). "The decline in national populations after 2010 will add to these problems by adversely affecting consumer demand, asset values, corporate profits, and balance sheets. In mature markets such as autos and home appliances, sales are likely to shrink year after year for as far as the eye can see" (Hewitt, 2002a; p. 9).

2.9 Loss of Global Power

Declining birthrates and the resultant population shortfall will bring about a social crisis of labor shortages in the form of a competition over scarce human resources in which militaries will have to compete with private industry for personnel. This will put EU governments in a position where they will be unable to fill their national and international security commitments. Military power will also decline as military actions will become increasingly difficult for these nations. In addition, tight national budgets will make it more difficult for nations to provide foreign aid (Longman, 2004b; p. 5). "While most of these nations have shifted from manpower-intensive to capital intensive armed forces, some analysts are concerned about the future size and demographic profile of forces" (Kinsella et al., 2005; p. 37).

2.10 Decreased European Contribution to the World

In 1900 nearly 25% of the world's population resided in Europe. By 2050 that figure is projected to decline to about 7.2% (United Nations Population Division: *World Population Prospects, the 2006 Revision*). Thus, Europe's importance to the world may be greatly diminished as it contributes a smaller and smaller portion of the world's population and productivity, in conjunction with its increasingly impotent military. This diminished contribution to the world may shift the focus of international negotiations and influence to other parts of the world.

2.11 Changes in the Ethnic Mix

"Of the 474 million citizens and legal foreign residents of the EU/EEA and Switzerland, some 42 million were born outside their European country of residence. In absolute terms, Germany had by far the largest foreign-born population (10.1 million), followed by France (6.4 million), the UK (5.8 million), Spain (4.8 million), Italy (2.5 million), Switzerland (1.7 million), and the Netherlands (1.6 million)" (Muenz, 2006; p. 3). With a decline in birth rates among native EU citizens, EU country populations will be composed increasingly of higher proportions of foreign-born individuals, often with quite significantly different ethnic, cultural and religious backgrounds.

3. Proposed Solutions

Analysis from the RAND Europe study (Grant et al., 2004; p. xiii) suggest three major options for dealing with the negative consequences brought about by the decline in fertility rates: "(1) promoting increased

immigration of working-age people; (2) encouraging more childbearing, especially among younger couples; and (3) reforming social policy to manage the negative consequences of these trends-including measures that could raise the retirement age or encourage more women to join the workforce.”

3.1 Options for Reforming Social Policy

The rising costs of dealing with an aging population will necessitate a number of immediate and painful policy adjustments by governments. The following are some of the options:

3.1.1 Higher taxes to support the current social welfare system

European baby boomers began drawing pensions in larger numbers in 2005. Countries soon facing depopulation will need to dramatically boost their tax take in coming years in order to run their governments and pay out social welfare benefits. Social security taxes now top 42 percent of payroll in Germany, for example, versus 15 percent in the U.S.. In the future, however, this may increase substantially. One major downside of raising taxes, however, is that higher taxes tend to depress economic activity which, as will soon be discussed, can contribute to economic downturns, subsequently further depressing birth rates. “While countries facing depopulation will need to dramatically boost their tax take in the coming years, they will face grave risks in the process. As growth rates slow, tax increases may prove counterproductive” (Hewitt, 2002b; p. 10).

3.1.2 Increasing the retirement age and/or restricting eligibility

Increasing retirement ages and restricting eligibility has been proposed as necessary adjustments to increasingly underfunded retirement and welfare systems. “Theoretically, raising the retirement age could help ease the burden of unfunded old-age benefits. But declining fitness among the general population is making this tactic less feasible” (Longman, 2004b; p. 5). Increases in the number of people working beyond the retirement age would also be offset by increasing numbers of people with age-related illnesses in the workforce. Though modern medicine has been able to increase the percentage of people living longer, “... It cannot, despite frequent claims, cure aging, much less prevent death” (Longman, 2004a; p. 94). “It is often difficult to appreciate that good medicine does not reduce the percentage of people with illnesses in our population. It increases that percentage” (Lino, 2003). In addition: “... even though raising retirement ages might seem like an obvious countermeasure to population aging, it is not necessarily achievable politically” (Longman 2004a; p. 65).

3.1.3 Reducing benefits

Reducing benefits will also be an inevitable consequence of current trends. Policy decisions in this direction could, however, prove to be very unpopular, especially if reductions violate actual or psychological (expected) contracts. This would result in significant political and social consequences since the majority of the population is now older and would resist such moves. If there does not appear to be overwhelming evidence of a clear and present danger, politicians may be too concerned about political expediency and possible civil disorder to do anything in the short term. Small adjustments, such as only raising the retirement age may, in and of themselves, not have much of an effect.

3.1.4 Increased work participation of older workers

Encouraging people to work longer and removing the barriers that prevent them from doing so would take up some of the slack. “To this end, new work arrangements and innovative workplace practices can be developed to sustain the working capacity and accommodate the needs of workers as they age” (WESS, 2007; p. 60). Current social security systems, however, provide strong financial incentives for workers to permanently leave the workforce at a relatively early age. Significant changes in thinking would be required as workers have grown to expect and even demand early retirement and a continuation of the generous retirement packages heretofore

provided by EU governments.

3.1.5 Increasing the level of female employment

Increasing the level of female employment has been suggested by some to be the ultimate solution, but: “Evidence from developed countries suggests that there is a trade-off for women between work and having children: increased participation of women in the workforce has been accompanied by delayed childbearing and declines in fertility rates” (WESS, 2007; p. 60). Under most circumstance, therefore, increasing the level of female employment would pay only a very short dividend but then quickly go on to reduce the fertility rate to even lower levels.

3.1.6 Outsourcing and offshoring

A number of EU companies have already moved abroad to take advantage of lower labor costs. According to Kirkegaard (2005; p. 14-15) benefits would accrue to “... European countries, whose companies engage in offshoring and offshore outsourcing and whose residents consume offshore and offshore outsourced goods and services” but such practices might receive significant resistance from labor due to “... Europe’s very low reemployment rate for laid-off workers. “In order to make increases in this area palatable, European governments would have to “... take on the task of ameliorating the losses of laid-off workers—the group most adversely affected by offshoring and offshore outsourcing—and productively reemploying them in the economy.” WESS (2007; p 59), however, concludes that: “Although it does alleviate labour shortages by shifting production to workers abroad, offshoring does not offset existing pressures on domestic old-age pension systems brought about by the fact that the retired population is increasing while the contributory base is not expanding.”

3.2 Increasing the Birthrate

Lutz, Sanderson and Sherbov (1997; p. 1) point out that: “The United Nations and other institutions have assumed that fertility will eventually recover to replacement level (TFR slightly above 2.0), but there is little support for this view.” In addition, Lutz, Shirbekk, and Testa (2006; p. 1) propose the existence of: “... self-reinforcing mechanisms that would result, if unchecked in a continued decrease in the number of births in the countries affected.” Publishing in the Vienna Yearbook of Population Research, they propose a *Fertility Trap Hypothesis* based on three components: (1) negative population growth momentum (fewer potential mothers in the future), (2) a decline in perception of ideal family size and (3) a combination of increasing aspirations of young adults versus expected income.

According to Garrett (2008; p. 1), “By itself, a declining fertility rate is of some concern, but there are also findings that as a species we are experiencing a decrease in our ability to have children. On one side of the equation is men’s ability to produce sperm, and on the other is female’s fecundity (fertility)” (Garrett, 2008; p. 6). “Is our population sustainable? The answer is no. The argument that still needs to be made is of the evolution of our diminishing ability to procreate, colluding with demographic changes, and how these processes are likely to affect our survival. We are already seeing a tsunami of demographic change that will submerge younger cohorts and create an increasingly older population. The added biological degradation will ensure that this process will continue for the long term” (Garrett, 2008; p. 5).

In addition, Lesthaeghe and Willems (1999; p. 1), utilizing the Bongaarts and Feeney model foresee continued below-replacement fertility, aging levels not significantly below ones currently forecast, unfavorable dependency ratios developing in the near future, and possibly a need for the renewal of labor importation. According to Kohler, Billari and Ortega (2006; p. 2), “... earlier notions that fertility rates in Europe may stabilize close to replacement rates have been shattered. In contrast, Europe during the past 15 years has experienced

‘lowest low’ total fertility rates at or below 1.3.” “... A continuation of this trend could substantially exacerbate the future aging of the population, reinforce a future decline in population size and constrain the effectiveness of policy interventions aimed at increasing the number of births.”

3.3 Increasing Immigration

3.3.1 Number of immigrants needed

“The Summary Table for the European Union from the UN Replacement Migration Report proposes one scenario in which the immigration needed to maintain EU population would be about 47 million immigrants and to maintain a constant ratio between the 15-64 age group and the over-65 age group from 1995 to 2050, a total of 700 million immigrants would be needed” (Treanor, 2007; p. 1).

“To prevent an eventual decline in the size of the 15 to 64 grouping (often termed the “working-age” population), Europe’s net migration will have to nearly quadruple to a long-term average of about 3.6 million a year. Migration of this magnitude would change the face of Europe: by 2050, under these two scenarios, the descendants of present-day non-Europeans will account for approximately 20 to 25 percent of Europe’s inhabitants” (Eberstadt, 2001; p. 8). Such a massive immigration would be very difficult to absorb. Just housing such a massive influx and enlarging existing infrastructures would represent a tremendous burden on government budgets. In addition, the WESS (2007; p. 59) concludes: “It is doubtful, however, whether migration can sufficiently offset the projected increases in dependency ratios.”

3.3.2 Concerns regarding ethnic takeovers

The Rand Europe Study (Grant et al. 2004; p. xiv) concludes that: “The sheer numbers of immigrants needed to offset population ageing in the EU and its member states would be unacceptable in Europe’s current sociopolitical climate.” More recently governments within the EU have actually tightened controls over immigration because of concerns over “social dis cohesion” (Coleman, 1995; pp. 197-198). In addition, the invasion of cheap labor would only increase the concerns among a growing proportion of Europeans who feel that they are already being overrun. “Immigration will help but only marginally. Attempting to maintain a constant ratio between working-age and pension-age populations might mean, for example, that 80 percent of Germany’s population in 2050 would consist of immigrants and their progeny” (Hewitt, 2002b; p. 15). In addition: “Fears are often expressed that immigration will lead to lower wages or higher unemployment for domestic workers” (Zimmerman, 1995; p. 53).

3.3.3 Immigrants may not bring needed skills

Another problem is that immigrants may not bring with them the higher level of work and language skills that the industrialized countries of the EU need to remain competitive. Additionally, a large portion of legal and especially illegal immigrants tend to concentrate to the lower segment of the labor market with requires lower skills. As a result the UK has recently attempted to ban non-EU unskilled workers (BBC News, 5th December 2007).

3.3.4 Diminishing supply

Birthrates have been plummeting all over Europe and not just in the EU countries. More recently there have also been significant drops in some parts of Asia and Latin America as well. “... because Mexican fertility rates have dropped so dramatically, the country is now aging five times faster than the United States” (Longman, 2004b; p. 2). “China’s low fertility means that its labor force will start shrinking by 2020, and 30 percent of China’s population could be over 60 by mid-century” (Longman, 2004b; p. 3). Increasingly European countries will have to compete with other countries such as the United States for immigrants, but it is by no means clear how many potential immigrants sub-Saharan Africa, the Middle East, and parts of South Asia will produce in the future in

order to make up for upcoming shortfalls (Longman, 2004b; p. 2). In addition, a report by the U.S. Bureau of International Affairs (2003; p. 13) points out that: “The existing diversity of regulations for occupational pension systems is an impediment to the mobility of labor, particularly between member states.”

3.3.5 Immigrants would themselves age

“... most immigrants arrive not as babies but with a third or so of their lives already behind them—and then go on to become elderly themselves. In the short term, therefore, immigrants can help to increase the ratio of workers to retirees, but in the long term, they add much less youth to the population than would newborn children” (Longman, 2004b; p. 7). The Rand Europe Study (Grant et al., 2004) recommends, therefore, that immigration be used as a potential tool for slowing, rather than overcoming population aging

4. Factors That May Limit Proposed Solutions

4.1 A Lack of Awareness of the Demographic Situation

The most significant problem limiting action on any of the proposed solutions is a lack of awareness of the true nature of the demographic situation. “... the continuing preoccupation with high fertility and rapid population growth has left the international population policy community poorly prepared to comprehend (much less respond to) the demographic trends emerging around the world today ...” (Eberstadt, 2001; p. 1). This lack of awareness comes as a consequence of such factors as:

4.1.1 A commitment to Neo-Malthusian philosophy

There are many in the mass media and the environmental movement who are so strongly committed to neo-Malthusian philosophy that they discount any data which appear contrary to their preconceived beliefs. There are even those (e.g., Francis, 2008) advocating that governments take extreme measures such as China’s one-child policy in order to further curtail population growth. The reason for such misinformed proposals may be that “... prevailing ideologies and agendas would be profoundly challenged by the prospect of human population actually falling” (Longman, 2004a; p. 5).

4.1.2 Widespread ignorance among the general public

Ignorance among the general public regarding current demographic trends results in the continued widespread belief that curtailing births has social benefit. Currently popular images of an increasingly overcrowded world will have to change before the general public will accept the new reality of decreasing populations and the inability of diminishing human resources to support economies. Instead of natural resources, in reality it is human resources we are running out of. “In 1998, welfare economist Amartya Sen won the Nobel Prize in large measure for his demonstrations that speculators, as well as corrupt or genocidal governments, are the cause of almost all modern-era famines. Famine today is a political problem—a matter of fair distribution of food, not of inadequate supply” (Longman 2004a; pp. 133-134).

4.1.3 A misunderstanding of the continued increase in absolute numbers

There is a false belief that since absolute numbers are still increasing or at least not dropping rapidly, population explosion is still a reality. Most people do not understand the effect of negative momentum wherein the population engine is rapidly running out of steam with the result that population will begin to drop rapidly once deaths begin exceeding births.

4.1.4 The worldwide trend toward urbanization

There is also confusion about the meaning of worldwide urbanization. Urbanization results in overcrowding

in many cities of the world, giving further credence to the misconception that the world is becoming overcrowded and, therefore, running out of natural resources. In fact, "... as more and more of the world's population moves to urban areas in which children offer little or no economic reward to their parents, and as women acquire economic opportunities and reproductive control, the social and financial costs of childbearing continue to rise" (Longman, 2004b). Thus, urbanization in and of itself may be a major contributing factor to declining fertility rates.

4.2 The Tendency to Look for a Single Simplistic Solution

Often those who underplay the consequences of falling fertility rates point to a single comprehensive solution as a "magic bullet" or panacea that will remedy the effects of population aging and decline. It may be such things as increased immigration, utilizing older workers, increased female employment, a sudden burst of technology or even a sudden increase in the birth rate. These unrealistic and uninformed approaches minimize the magnitude of the situation and impede adequate response.

4.3 Recent Lifestyle Changes Resulting in Diminished Health

Personal health is determined by a combination of factors, but of overwhelming importance is culture and behavior (Rosenberg, 1995; p. 1). Recent behavioral lifestyle changes within EU nations will diminish the productive capacity of the work force and put further stress on health and welfare systems.

For example, the number of reported HIV cases in EU member states has doubled since 1998 and half of the new cases affect people aged 15-25. (EurActiv.com, 31st January 2007, updated: 7th December 2007). "An analysis of current population policies indicated that a majority of Governments viewed HIV/AIDS as the most significant demographic issue facing them: 93 percent of the Governments of developing countries expressed this view as did 81 percent of those of developed countries." (Population Newsletter, 2007; p. 1).

Illegal drug use is an important cause of mortality among young adults in EU countries. It has been estimated that in some urban areas opiate use can account for over 20% of overall mortality of 15-49 year olds (Eurosurveillance, 2008; p. 1).

Europeans are the heaviest drinkers in the world with resultant significant medical and social consequences (EU Public Health Information System, EUPHIX, EUphact. Bilthoven: RIVM, 5th June 2008). When measuring the health impact of alcohol for the whole region, an estimated 6.1% of all deaths are attributed to alcohol consumption (Rehm, Taylor and Patra; 2002). Alcohol use, along with related consequences, is the leading cause of death of young people in Europe (EurActiv.com, 21st Feb 2001).

Around one-third of the population in the EU smokes. The associated health problems include some 650,000 smoking-related deaths each year. Almost half of those dying are between 35-69. It is estimated that 25% of all cancer deaths and 15% of all deaths in the Union could be attributed to smoking. (European Commission, Health EU, the Public Health Portal of the European Union, updated: 26th March 2009).

"Obesity is rising at an alarming rate throughout Europe. It forms a pan-European epidemic that presents a major barrier to the prevention of chronic non-communicable diseases. At least 135 million EU citizens are affected and perhaps another 70 million in those countries seeking to join. In many countries now significantly more than half of the adult population is overweight and up to 30% of adults are chronically obese. The prevalence among children is rising significantly with as many as one in four affected in some regions" (James, Finer, Lobstein, Baillie, Leach, Scarrott, Rigby, Hainer, Frelut, and Seidell, 2002; p. 3).

Thus, besides the problems of age-related diseases the general population is experiencing more culture- and behavior-related diseases that drive up health care costs and limit national productivity.

4.4 Resistance to Immigration from Social and Political Climates

The EU is increasingly being characterized as a xenophobic melting pot. Though often considered to be the most realistic solution, opening the floodgates to immigration from outside Europe would be perceived as by many Europeans as bitter medicine. Increasing hostility toward immigrants—especially those from Muslim countries will be a significant deterrent to the attempts of governments to increase immigration. According to the Rand Europe Study (Grant et al., 2004), the sheer numbers of immigrants required would be unacceptable in Europe's current socio-political climate.

4.5 Resistance to Policy Interventions Designed to Raise Taxes or Lower Benefits

“Economists have expressed concerns about declining saving rates, while politicians and the general public have been reluctant to embrace increased payroll taxes and higher retirement ages” (Kinsella et al., 2005). “Over several decades during the latter 20th century, many of the more developed nations lowered the official age at which people become fully entitled to public pension benefits” (Dobriansky et al., 2007). Therefore, “... Governments are in a bind. It is no accident that in the past year France, Austria, Italy and Germany have all experienced angry outbreaks of labour unrest, sparked by attempts to make their pension systems less generous. But the longer governments wait, the worse the problem. Pension obligations will only get more onerous; and as voters age it will become even harder to persuade them to cut pensions back” (The Economist, 17th July 2003). Similarly there were riots in Greece in May of 2010 when, the Greek parliament approved new spending cuts and taxes Friday aimed at defusing the country's debt crisis (Euronews, 18th May 2010).

4.6 The Effects of Economic Uncertainty

4.6.1 Further reduction in birth rates

Global population projections generally assume conditions of “orderly progress”, meaning that catastrophes such as wars, famines and new epidemics will not take place during the projected period.

Political, economic and social environments, however, can also greatly influence such factors as birth rates the efficacy of government policies designed to remedy them. Several research studies have found, for example, a link between economic uncertainty and birth rates such that hard economic times act as lagging economic indicators and cause people to delay having children or not have any altogether (e.g., Bhaumik & Nugent, 2005). Keilman (2008) posits that economic insecurity is possibly a major factor related to low birth rates in Eastern and Central Europe. As a result, the “Great Recession” which began in 2007 is cited by many experts (e.g., Cohn and Livingston, 2010) to be the cause of the lowest birth rate in a century in the U.S.

4.6.2 Further strain on pension, health and welfare systems

Already under stress because of a decreasing dependency ratio, these systems could collapse due to increasing payouts and decreasing levels of revenue. In this way a vicious cycle could be initiated as economic uncertainty depresses fertility rates and lower fertility rates in turn create economic uncertainty in the form of “aging recessions”. The huge public deficits which have occurred in Portugal, Spain and Greece are also projected to be run by many other major industrialized countries because of the mounting cost of pensions and health care. This will also contribute to future economic downturns.

4.6.3 Further decreases in productivity

“Firms typically refrain from making productivity enhancing investments in recession-like conditions, where overcapacity, excess inventory, and asset deflation combine to reduce returns on investment” (Hewitt, 2002a; p. 4). “In the recent economic downturn, productivity growth has fallen significantly, as it has in the previous three recessions and the mid 1970s, early 1980s and early 1990s” (Myers, 2009; p. 1).

4.6.4 Unemployment

The irony is that despite serious skills and labor shortages in a number of key sectors, many EU economies have experienced persistently high unemployment rates. A prime example would be current unemployment rates following the recession which began in the autumn of 2008. The problem is that even though an infusion of workers is needed, governments are reluctant to import foreign workers who are seen as taking needed jobs from EU citizens. A key factor is that fact that: “The employment rate for those with high skill levels across the EU as a whole is approximately 85%, for medium skill levels 70% and for low skill levels it stands at 50%” (European Commission report, February 2010).

4.6.5 Backlash against immigrants

In economic hard times it is less likely that native residents will accept immigrants as prejudice and nativism (favoring the interests of natives over newcomers or immigrants) emerge. This could result in a backlash against immigrants. Immigrants in turn are likely to react against this backlash and to what they perceive to be discriminatory employment practices through protests or riots such as the burning of nearly 9,000 vehicles in France perpetrated by mostly Arab Muslim youths in 2005 (BBC News, 16th November 2005). Such protests tend to exacerbate the vicious cycle of increased backlash against immigrants.

4.6.6 A tendency to engage in deficit spending

“Across Europe, governments have gotten so used to embracing debt during economically tight times such as these that some experts are starting to wonder if they will get back to viable deficit levels-much less balanced budgets-anytime soon ...Twenty of the European Union’s 27 members are running deficits to ease their way through the global recession, with the average pegged at 7.5% this year. Three years ago, the E.U.’s deficit average was just 0.08% of the bloc’s total GDP. ... Greece is already scrambling to lower its deficit of nearly 13% to the UE ceiling of 3% by the end of 2012 under a European Commission plan ...” (Crumley, 2010).

4.7 Decreased Cooperation among Countries

Economic downturns also make it harder for countries to cooperate with one another, since during economic hard-times the very diverse countries which make up the EU tend to look out for their own interests and become more protectionist as concerns regarding national sovereignty begin to reassert themselves. During the EU integration movement, for example, a recession resulted in the Luxembourg Compromise of 1966 which granted member countries the right to veto any provision where they felt that their “vital interests” were threatened. This compromise was necessary at the time to hold the alliance together. Under conditions of continued economic stress, however, the alliance might not hold. Former European Commission Jacques Delors has expressed concerns in this direction and has “... estimated the chance of European disintegration to be 50% after the 2004 enlargement” (Vollaard, 2008).

4.8 The Delayed Effects of Government Policy Interventions

Government programs, even if successful, take many years to implement. The Rand Europe Study (Grant et al., 2004), points out that the implementation of government policy interventions is slow. There are five periods during the process:

- “(1) Political consensus is sought;
- (2) Consensus is translated into policy actions;
- (3) Policy actions are delivered and implemented;
- (4) Those actions alter behavior; and
- (5) The impact of the change in behavior achieves the (direct or indirect) policy objective.

For policy actions to affect fertility, however, the last stage in the cycle would take a generation before there begin to be new entrants into the labor force.”

5. Resolution

The Rand Europe study (Grant et al., 2004) concludes that:

“(1) Because of Europe’s socio-political climate, replacement immigration cannot prevent population aging or its consequences.

(2) National policies can slow fertility declines under the right circumstances.

(3) No single type of policy intervention will necessarily slow fertility declines.

(4) What works in one country may not work in another.

(5) Population policies take effect slowly, and therefore may be politically less attractive.”

5.1 A Combination of Solutions is Required

From previous discussion it is apparent then that a combination of interventions is needed in order to mitigate the negative consequences of declining fertility rates. And because these negative consequences declining birthrates and population aging become compounded as time passes, immediate action is necessary in order to stabilize EU economies.

5.1.1 Policy interventions designed to shore up pension and social systems welfare

Governments, for example, need to move right away on policy adjustments such as: shoring up pension and welfare systems through increased taxes, raising retirement ages, and cutting benefits. Such adjustments must be accompanied by extensive public information campaigns alerting the general public to the true nature of current demographic problems so that people will understand why these adjustments are necessary.

5.1.2 Immigration

A study by the UN Population Division (2000) concluded that immigration could buffer the impact of aging only if used by governments in conjunction with other policies. Though they may not be able to prevent population aging, increased levels of immigration will be necessary in the short-term in order to slow it down. The European Commission, however, believes that “the European Union [...] does not have the resources to decently receive all the migrants who hope to find a better life here” (Europa Press Releases, 17th June 2008). Because of concerns already expressed it would be best if governments sought immigration of younger skilled workers from compatible cultures, as exemplified by recent migrations from Latin America to southern European countries such as Portugal, Spain and Italy (Pellegrino, 2004). Another viable source for skilled labor might be India. Due to the short supply from some sources, however, a world-wide competition for scarce labor may ensue.

5.1.3 Incentive programs designed to increase birth rates

Incentive programs need to change emphasis from subsidizing aging to promoting child birth. Efforts that are designed purely to deal with the consequences of below replacement remedy the symptoms but not the root cause of the current demographic crisis. Governments need to sponsor widespread public information programs highlighting the seriousness of the situation. They also need to provide incentive programs designed to promote child birth. “Policies that remove workplace and career impediments to childrearing are a critical part of any solution” (Grant et al., 2004; p. xvi). Though all countries within the EU have below replacement rate fertility rates, some have higher rates than others. “France currently has the second highest rate of fertility in Europe (behind Ireland) and has one of the most interventionist set of policies aimed at encouraging families to have children.” “...

Sweden has been somewhat successful in reversing fertility declines with a different set of policies” (Grant, et al., 2004; p xvi). It is imperative, therefore, that governments provide incentive programs designed to turn fertility declines around. This may be possible because of the reported gap between realized and desired fertility (Sleebos, 2003; p. 29). To make such programs work, however, “... women and men must choose to have children; no number of institutional configurations will by themselves result in the birth of babies” (Vos, 2008; abstract). However, the effects of increased birthrates may be delayed because (1) implementation of government policy interventions is slow and, (2) it would take a generation before these new EU citizens would hit the job market.

5.1.4 Incentive programs to bolster health

“To cope with the diseases of affluence that make older workers less productive, rich societies must make greater efforts to promote public health” (Longman, 2004b; p.10). Improving the overall health of the population would result in two major benefits: (1) reduce the amount of government spending on health-related problems and (2) ensure that an older work force could remain productive longer. Such programs could reward those who make lifestyle changes to improve fitness, such as quitting smoking, exercising and losing weight (Longman, 2004a; p. 97).

5.1.5 Improving working conditions and increasing work flexibility

Governments can also take up some of the labor shortage slack through job redesign efforts designed to increase part-time and flex-time employment and also, where appropriate, by encouraging telecommuting (Longman, 2004b; p. 11). “One important measure that could be taken to encourage people to increase the number of their working years would entail improving working conditions and promoting the overall greater availability of satisfying and adequately paid work ” (WESS, 2007; p. 62).

5.1.6 Upgrading, adapting and widening workforce skills

“Appropriate adjustments may be needed in the work environment to ensure that older workers have the skills, health and capacity to remain employed into their later years” (WESS, 2007; p. 62). Upgrading, adapting and widening the skills portfolio of individuals to create and fill the jobs of tomorrow is one of the greatest challenges facing Europe today.”... “And yet, it is an inconvenient truth that, despite progress in recent years, much of Europe is still not sufficiently skilled. Nearly one third of Europe’s population aged 25-64—around 77 million people—have no, or low formal qualifications. Those with low qualifications are much less likely to upgrade their skills and follow lifelong learning” (European Commission Report, February 2010; p. 4). “Money that is now spent subsidizing early workforce withdrawal must be diverted toward mid-life retraining” (Hewitt, 2002a; p. 9).

5.2 Best Case Scenario—Stabilization: A Fast-Closing Window of Opportunity

As the situation worsens it is becoming apparent that there is a brief window of opportunity during which decisive government actions could turn things around. “During the next few years, countries must exploit a fast-closing window of opportunity to intensify reform before demographic effects come to bear. The EU report notes that, similar to the impact of an individual worker delaying savings, delays at the national level will increase the costs of adjustment and shift an enormous economic burden to the next generation of workers and tax payers” (Dobriansky et al., 2007).

The best case scenario result of an effective application of all of these solutions, barring continued economic downturns or physical disasters, would be a stabilization of EU economies and continued growth. Such an ideal combination, however, would be difficult to achieve and a less-than-ideal combination could result in a lackluster stabilization. “So, Europe will probably try to muddle through its demographic problem. There will be some pension reform, a bit more immigration, more family-friendly policies, higher taxes, growing fiscal problems for

governments and slower economic growth. With luck the European Union will avoid or postpone a really much larger economic crisis. But the political and economic renaissance of Europe that was predicted at the European convention is likely to be still born” (The Economist, 17th July 2003).

5.3 Worst Case Scenario–Demographic Collapse: The Black Hole Analogy

Governments, however, need to move quickly and aggressively on several fronts in order to prevent disaster. “Some governments have begun to plan for the long term, but most have not” (Dobriansky et al., 2007; p. 3). If decisive action is not taken immediately, as the pace of population aging accelerates, there will come a point in time (an event horizon, so to speak) when current momentum will cause the EU’s economic and social systems to collapse. This could be the case, not just because of the negative consequences of population aging and decline, but also within the context of other economic problems facing the EU; such as, deficit spending by governments such as Greece, Spain, Portugal and the U.K. and the great possibility these and other weaker economies could threaten the stability union. Without massive changes, the current welfare state of most EU countries is unsustainable. This one two punch of both economic and demographic deficits might be too much to bear. There are also some very divisive social issues currently facing the EU and its member countries (e.g., problems with immigration, the failure to ratify a constitution, along with ongoing citizen concerns about the democratic deficit and loss of sovereignty bureaucrats in Brussels). In a world increasingly characterized by the breakup of countries into smaller units, the European Union remains an exception, but for how long? Hewitt (2002a; p. 2) asserts that: “The most rapidly depopulating nations face the prospect of lengthy ‘aging recessions’ characterized by a vicious cycle of falling demand, collapsing asset values, shrinking corporate profits, deteriorating balance sheets in households as well as financial institutions, weakening currencies, and soaring budget pressures.” Vollaard (2008) has suggested that if the EU dissolution does occur the EU may survive in a truncated state as has the former Soviet Union.

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